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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,822	04/09/2004	Hae-Kyoung Kim	61610134US	8493
58/027 7590 02/17/2009 H.C. PARK & ASSOCIATES, PLC 8500 LEESBURG PIKE SUITE 7500 VIENNA, VA 22182				
EXAMINER WANG, EUGENIA				
ART UNIT 1795		PAPER NUMBER		
NOTIFICATION DATE 02/17/2009		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATENT@PARK-LAW.COM

**Advisory Action  
Before the Filing of an Appeal Brief**

**Application No.**

10/820,822

**Applicant(s)**

KIM ET AL.

**Examiner**

EUGENIA WANG

**Art Unit**

1795

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 04 February 2009 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.  
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.  
Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ They raise the issue of new matter (see NOTE below);  
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
The status of the claim(s) is (or will be) as follows:  
Claim(s) allowed: \_\_\_\_\_.  
Claim(s) objected to: \_\_\_\_\_.  
Claim(s) rejected: \_\_\_\_\_.  
Claim(s) withdrawn from consideration: \_\_\_\_\_.

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: \_\_\_\_\_.  
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). \_\_\_\_\_.  
13. ☒ Other: See Continuation Sheet.

/PATRICK RYAN/  
Supervisory Patent Examiner, Art Unit 1795

Continuation of 13. Other: Applicant argues that the previous office action mischaracterizes the terms of claim 7 and the teachings of US 6890674 (Beckmann et al.). Specifically Applicant argues that although Beckmann et al.'s resistance is based on an expansion of Nafion, the resistance value is a different value than that of Nafion and should be considered a separate variable input (in like with the fact that the claim language requires "a variable input consist of the concentration of the fuel and volume of the sensor film").

Examiner respectfully disagrees with Applicant's position. The input itself is with respect to the Nafion expansion (volume), as the resistance is just a measure of the expansion. And thus, it is interpreted that the only inputs are with respect to the concentration of the methanol and the expansion of Nafion (since the measured resistance portion is based off of the Nafion expansion, the input variable with respect to resistance is actually Nafion expansion (col. 8, lines 52-60)). Using a proportional relationship does not mean that the input of the signal is different. As set forth above, the actual input is the Nafion expansion. With such an interpretation, Beckmann et al. does teach that "the electrical signal is determined based on a variable input consisting of the concentration of the fuel and the volume of the sensor film." Thus the rejection of record is maintained.

Applicant argues that if resistance value is not considered a separate variable input, then the only variable input would only be considered to be the concentration of methanol, as expansion of Nafion as well as resistance is based on that.

Examiner respectfully disagrees. Such a statement mischaracterizes Examiner's position as well as what is necessary for concentration sensing. Two variables are inherently necessary for to determine the concentration - (1) something having a concentration (concentration of the fuel, in this instance) and (2) a means to determine the concentration (expansion of Nafion, in this instance). Without the second variable, concentration cannot be determined. However, the relationship used between the expansion and resistance is different than what constitutes a variable input. Resistance is a relationship based off of the variable input of Nafion expansion. It is merely a relationship used to interpret the Nafion expansion and is not seen to be a variable input (as it does not exist in absence of Nafion expansion). Accordingly, Applicant's arguments are not found to be convincing, and the rejection of record is maintained.

Applicant argues that without resistance as a variable input, Beckmann et al.'s device would not work, and thus cannot be relied upon to "a variable input consist of the concentration of the fuel and volume of the sensor film."

Examiner respectfully disagrees with Applicant's position. As set forth above, it is merely a relationship to evaluate the variable input of the Nafion expansion. It is not a variable input itself, as it cannot stand alone (without Nafion expansion). Accordingly, the signal is based on only two variable inputs - (1) the concentration of the fuel and (2) the expansion of the Nafion, wherein resistance is only used as a means to evaluate the expansion and is thus not a variable input. Thus, Applicant's arguments are not found to be persuasive, and the rejection of record is maintained.

Applicant argues (with respect to the 103 rejections of claims 1, 3, 4, 6, 7, 9, 11, 13, 15, and 22) that, like Beckmann et al. does not teach that the variable input consists of the concentration of the fuel and volume of the sensor, specifically noting that such arguments as applied to claim 17 apply to claim 1 as well, and thus Surampudi et al. in view of Beckmann et al. does not teach all of the claim limitations.

Examiner respectfully disagrees. Examiner's position with respect to such arguments have been fully addressed in the preceding paragraphs. The position is not reiterated herein for brevity's sake. However, Examiner would like to direct Applicant's attention to the preceding paragraphs for clarification on how Beckmann et al. does teach that the variable input consists of the concentration of the fuel and volume of the sensor, which is incorporated herein, as applied to claim 1. Furthermore, it is noted that Applicant does not argue how the combination of Surampudi et al. and Beckmann et al. is not proper, or how the combination fails to teach a feature (other than with respect to what the variable input consists of). Therefore, Examiner maintains the obviousness, as set forth above, and upholds the rejection.

With respect to the arguments regarding the 103 rejections (with respect to claim 19), Applicant argues that the prior art used to obviate the rejected claims (Surampudi et al.) do not cure the deficiencies of the primary reference (Beckmann et al.). Applicant does not argue how the combination is not proper. Therefore, the Examiner maintains the obviousness rejections and upholds the rejection of the primary reference, as above.